the ukpms user manual

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Volume 2

Visual Data Collection for UKPMS

Chapter 8: Detailed Visual Inspection (DVI)

Document Information

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Author	James Wallis
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PCIS Support Contractor
TRL
Crowthorne House
Nine Mile Ride
Wokingham
Berkshire
RG40 3GA

www.pcis.org.uk

Email: ukpms@trl.co.uk
Phone: +44 (0)1344 770480
Fax: +44 (0)1344 770356

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SECTION 1 – DETAILED VISUAL INSPECTION

1 Introduction

The UKPMS Detailed Visual Inspection (DVI) records measured areas or lengths for a wider range of more closely defined defects (than for CVI and FNS), aggregated within short sub-sections, 20 metres in length by default. The defects collected for DVI are generally defined to a closer level of detail than CVI and FNS. In order to ensure broad consistency between the two surveys a single CVI and FNS defect is normally equivalent to a number of DVI defects.

It is intended that DVI is used where more detailed information is required to support and validate treatment decisions and scheme identification, supplementing CVI data; it may also be used on a cyclical basis for parts of the network where a more detailed routine visual assessment is required or where driven surveys are not possible.

For DVI, sections are divided into sub-sections which can be located within the section by their start or end chainage and length. For all construction types, the sub-sections within a section have consistent length, normally 20m. For jointed concrete carriageways sub-section lengths can vary along the carriageway, to ensure that each bay (i.e. the length between transverse joints) is considered as a separate subsection.

In principle, variable subsections can be used for any pavement type, and users may find it beneficial especially in locations where there are long lengths of clearly consistent defectiveness (or non-defectiveness). It is also possible, in some commercial DCD software packages, to collect defects individually, and for the aggregation and allocation to sub-sections to take place automatically, through post-processing of the survey data.

DVI will normally be carried out on foot by two surveyors, although it may be possible for the survey to be carried out by a single surveyor where local health and safety guidelines permit. Both team members will be involved in the identification of defects present but, in general, one surveyor will record defects on the DCD while the other measures the defect dimensions with the measuring wheel (and tape as necessary) and also the section/sub-section length (measuring wheel). As it is a walked survey, productivity is much lower than that for a CVI survey with typical outputs between 2 and 5 km per day.

Wheel Track Major Cracking on Bituminous carriageways is recorded as the lane length affected. The maximum length that can be recorded will depend on the cross-section position method that is being used. For example, using simplified cross-section positions, a 20m sub-section single two-lane carriageway, has a total lane length of 40m. Using full cross-section positions, each lane would be considered separately with a total length of 20m each. A

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lane is considered to be defective if either or both wheel tracks are affected by the defect.

In the example in Figure 1 *Recording Wheel Track Cracking in DVI survey*, in the first sub-section 20m of Wheel Track Cracking is recorded in CL1 and 10m in CR1, using the Full XSP Method, or 30m in "C" using the Minimal XSP Method.

In the sub-section from 20 to 40m, only the length of that part of the area of the cracking where one or more wheel tracks are affected is recorded, in this case 4m of the offside wheel track on the left hand lane. Using the Full XSP method 4m is recorded in "CL1", and using the Minimal XSP method, 4m is recorded in "C".

In the final sub-section, from 40 to 60m the wheel tracks of the entire length of both lanes are affected by major cracking. Using the Full XSP Method 20m of Wheel Track Cracking is recorded in both CL1 and CR1. 40m of Wheel Track Cracking is recorded in "C" when the Minimal XSP Method is used.

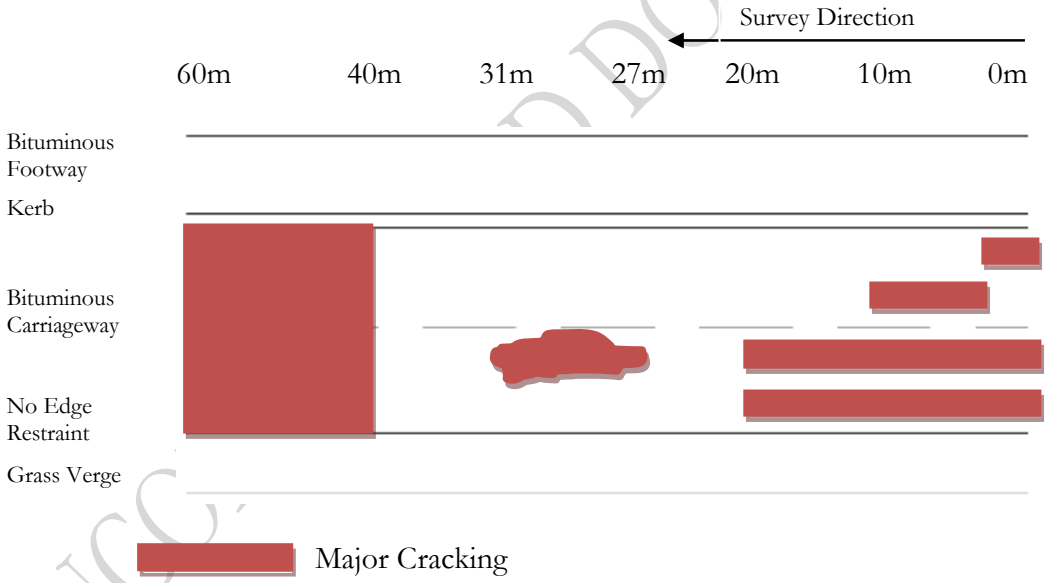

Figure 1 Recording Wheel Track Cracking on DVI Survey

In all cases of wheel track cracking, the area of major cracking, including that part that has already been recorded as Wheel Track Major Cracking is also recorded as Whole Carriageway Major Cracking. For single wheel track cracks assume a half metre width in determining the area of Whole Carriageway Major Cracking.

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2 Treatment of Machine Collected Rutting in Conjunction with DVI Surveys

The recommended approach to the collection of wheel track rutting is to use a machine-based technique. In order to accommodate this as an alternative to the visual assessment of rutting, a new survey type has been created - Machine Collected Rutting for DVI (DRUT). This has a single defect that must be created externally. When carrying out an Automatic Pass, for example to produce a Performance Indicator, the appropriate Rutting Survey type must be selected in conjunction with the associated visual survey type.

In practice, due to the widespread availability of SCANNER surveys vehicles, machine measurements of rut depth are likely to be made by SCANNER accredited vehicles. Further details are given in the SCANNER User Guide and Specification, available on the PCIS website. Reference should be made to the most recent version (currently 2009).

The rules for creating DRUT surveys are as follows:

- Average Rut depth value in mm for 10m sub-sections, calculated as the mean of all readings in the 10m length (where "reading" = average of left and right wheel track rut depth. (Full XSP)
- Currently, either laser or ultrasonic techniques are acceptable for the purpose of measuring rut depth, providing the equipment can be shown to be calibrated to +/- 2mm accuracy in recording/processing a depression (rut). The number of transverse readings taken along the road may be variable, but should be at least 1 every 2m.

3 Collection of concrete joints for DVI surveys

All concrete joints are required to help processing. The collection of transverse and longitudinal joints is a mandatory requirement.

3.1 Transverse Joint

This is an expansion joint which runs transversely across the carriageway. This allows the concrete bays to expand and contract in summer and winter and usually has a sealant within the gaps.
This length of this item shall be recorded for every XSP it crosses and its position along the section shall also be recorded.

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3.2 Longitudinal Joint

This is an expansion joint which runs longitudinally along the carriageway. This allows the concrete bays to expand and contract in summer and winter and usually has a sealant within the gaps.

This length of this item is recorded for every XSP it crosses and the position along the section is also recorded.

Figure 2 and Table 1 *Recording of concrete joints – Full XSP*, below show how these items are recorded using full
XSP:

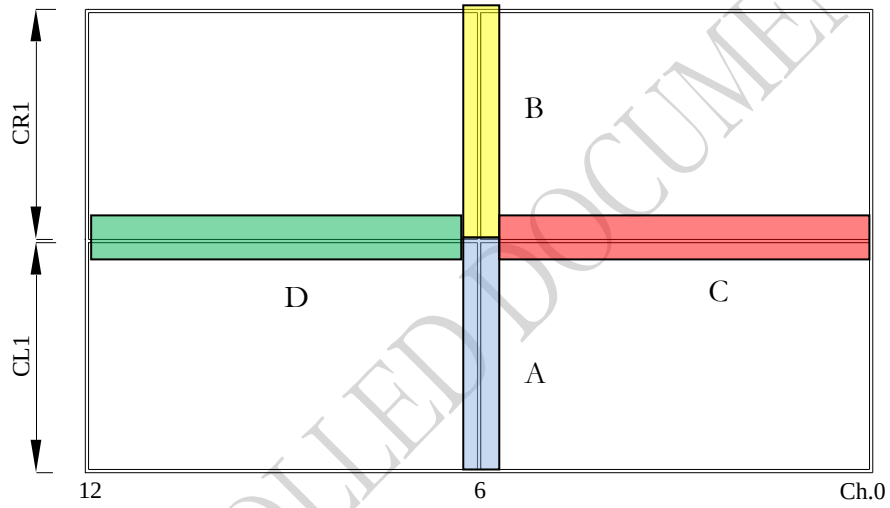

Figure 2 Recording of concrete joints – Full XSP

Transverse joint at position A	is recorded at ch.6 with a length of 3.5m in CL1
Transverse joint at position B	is recorded at ch.6 with a length of 3.5m in CR1
Longitudinal joint at position C	is recorded at between ch.0 and ch.6 in CL1
Longitudinal joint at position D	is recorded at between ch.6 and ch.12 in CL1

Table 1 Recording of concrete joints – Full XSP

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Figure 3 and Table 2 *Recording of concrete joints – Simple XSP*, below show how these items are recorded using simple XSP:

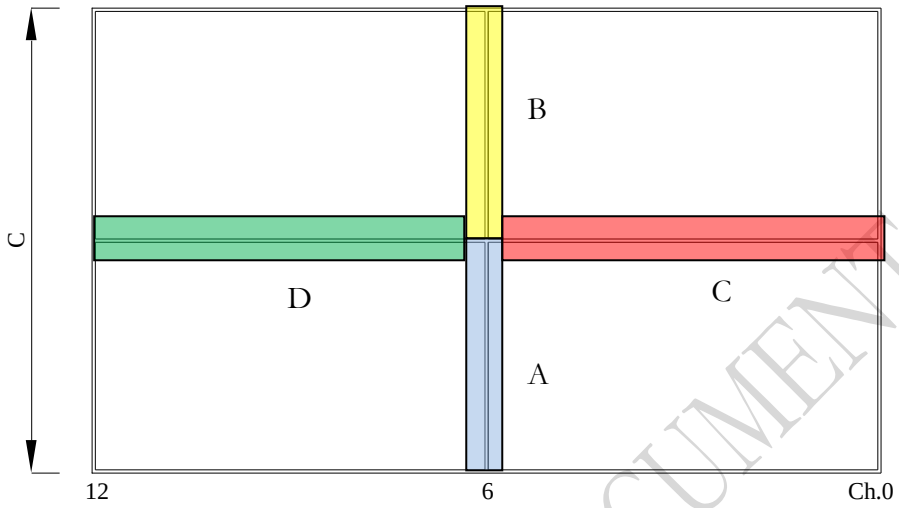

Figure 3 – Recording of concrete joints – Simple XSP

Transverse joint at position A	Are recorded as a single transverse joint at ch.6 with a length of 7m in XSP C
Transverse joint at position B	
Longitudinal joint at position C	is recorded at between ch.0 and ch.6 in XSP C
Longitudinal joint at position D	is recorded at between ch.6 and ch.12 in XSP C

Table 2 Recording of concrete joints – Simple XSP

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4 Frequently Asked Questions

Q1. Can DVI Surveys be carried out from a moving vehicle?

No.

Q2. Should kerbs be surveyed during carriageway or footway surveys?

It is recommended that kerbs should be surveyed during DVI

Q3. What is the minimum defect area to be recorded?

0.1m^2 (i.e. 0.1m*1m)

Q4. For a linear defect, what is the minimum defect Length to be recorded?

1m

Q5. Does an edge defect exist if there is an edge restraint i.e. kerb or channel?

No – See Chapter 1

Q6. What are the requirements for audit on a DVI Survey ?

Auditing should be carried out in accordance with Chapter 4 *QA and Audit* of Volume 2 of this UKPMS User Manual. The auditor should be accredited.

Q7. Are grass verges included as features in UKPMS?

Grass Verges are not included in the standard UKPMS rule set, however if a grassed verge does exist then consideration shall be given to its XSP when surveying paved areas.

Q7. Can Left and Right footways be inspected separately?

Left and right footways can be inspected separately if you use using the 'master/partial' survey option.

Q8. Can DVI surveys be used as an alternative to CVI surveys?

Yes, DVI surveys can be converted using the UKPMS conversion software, to replicate a CVI survey. See Chapter 7 *Coarse Visual Inspection (CVI)* of Volume 2 of this UKPMS User Manual. The conversion software is available from www.pcis.org.uk. Users should be aware that the conversion process is only approximate and there may be differences in the final result between using DVI survey data directly, and using DVI survey data converted to CVI, in UKPMS calculations.

Q9. Can you clarify the difference between chipping loss and fretting?

Yes, chipping loss can only apply to surface applied chippings which are laid on the original wearing/surface course. Figure 4 *Illustration of Chipping Loss & Fretting* below shows diagrammatically how the different defects are to be recorded. The shaded area shows where the material is missing and what defect is recorded.

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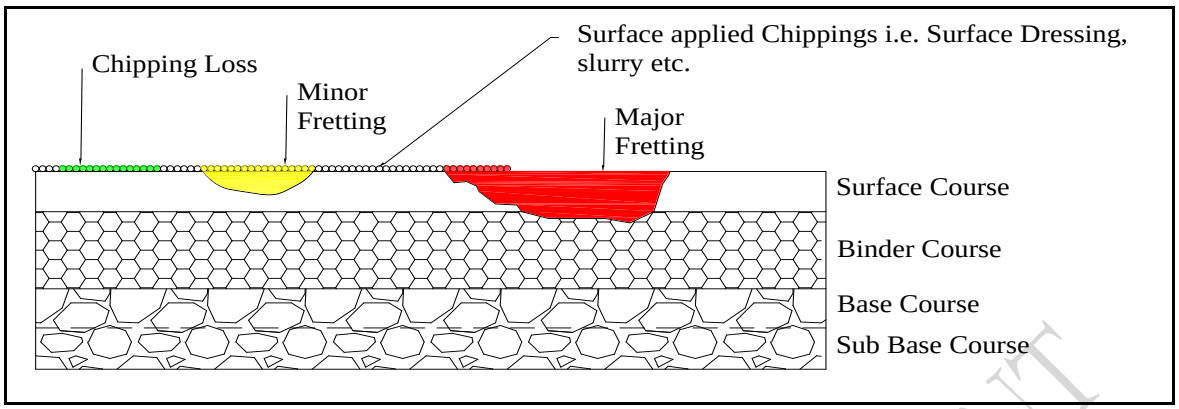

Figure 4 Illustration of Chipping Loss & Fretting

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Q10. Can you clarify the difference between major and minor chipping loss?

The difference between major and minor chipping loss is whether more than or less than $^{1}/_{3}{}^{rd}$ of the chippings within the defect area are missing. The confusion lies within defining the defect area; this is shown in Figure 5 *Illustration of Major and Minor Chipping Loss* below.

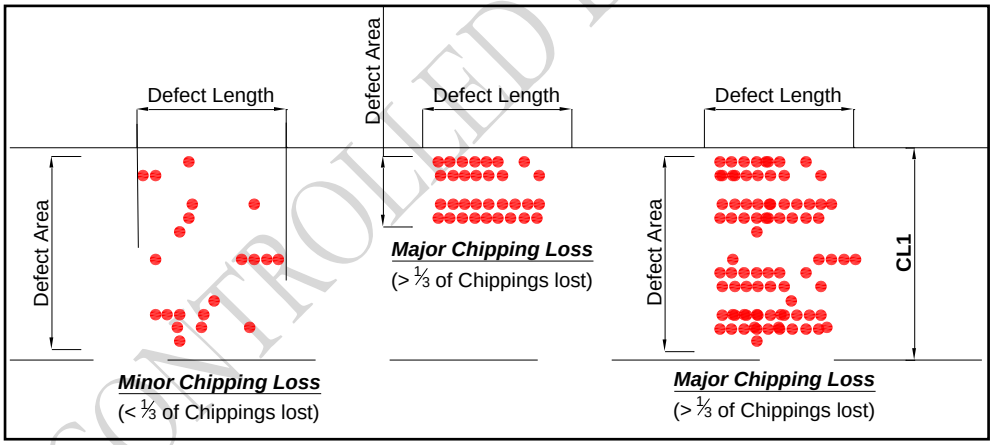

Figure 5 Illustration of Major and Minor Chipping Loss

Q9. Can you clarify the difference between Major and Minor fretting?

Yes, Major Fretting is where the surface course is no longer discernible. For clarification a depth as been added and the defect does not need to extend to the binder course material. Minor Fretting are areas of where the surface course has worn but less than 20mm. Figure 6 and Figure 7 Illustration of Major and Minor Fretting illustrate the difference.

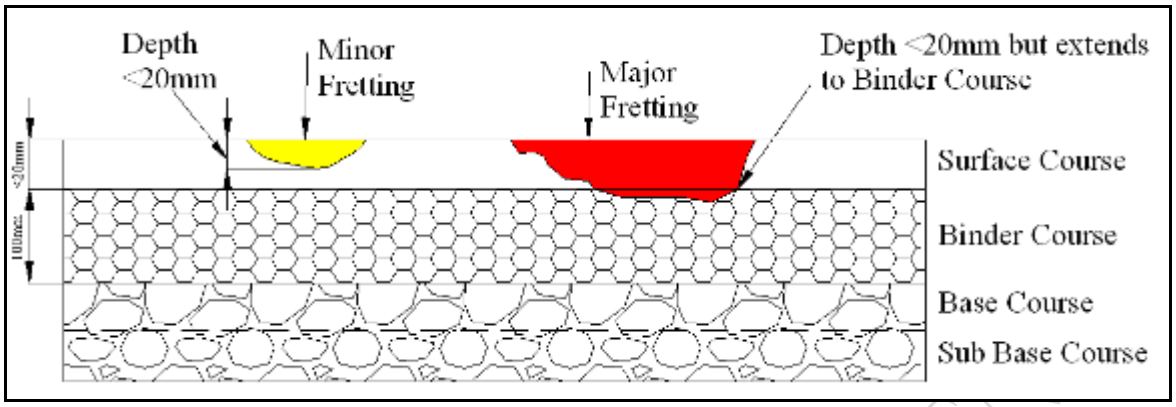

Figure 6 Illustration of Major and Minor Fretting on Surface <20mm thick

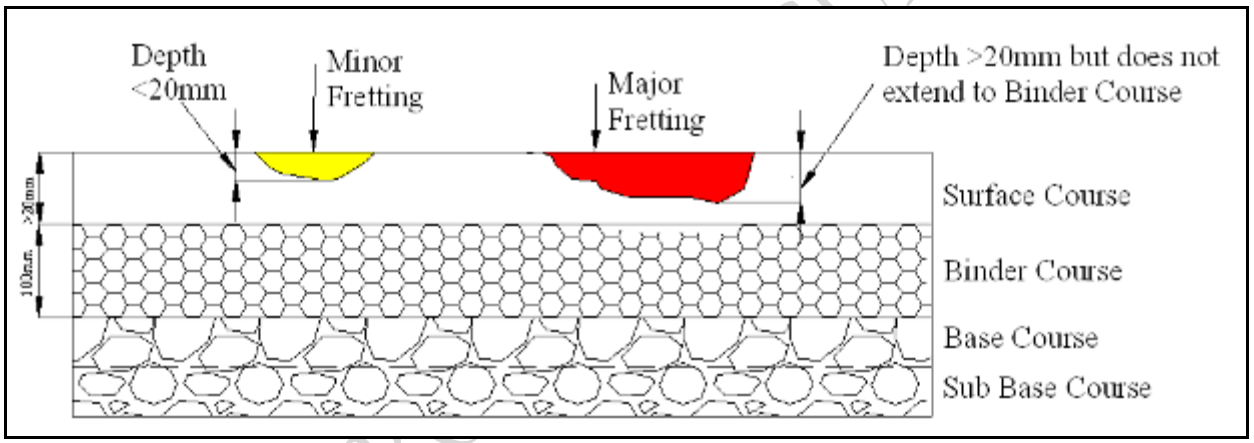

Figure 7 Illustration of Major and Minor Fretting on Surface >20mm thick

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Q10. Can you clarify whether joints are required for Concrete surveys?

It is now mandatory to collect transverse and longitudinal joints when carrying out a DVI survey on Concrete roads. This information is essential for processing concrete defects and creating the correct sub-section length. If the DVI data is chopped into normal 20m sub-section there may be 3 or 4 bays within that 20m. If one bay has failed it shall be watered down across the 20m sub section and not have its own sub section length. Figure 8 *Illustration of Major Concrete Bays/Joint Collection* illustrates the affect. The area outlined in red is in the same bay as the area outlined in green, although the UKPMS system is not aware of the transverse joints it therefore assumes the defect is a small area over a 20m sub section length. The area outlined in green has a subsection length of 6m (12m-6m), therefore has a larger defective area and may produce treatments etc.

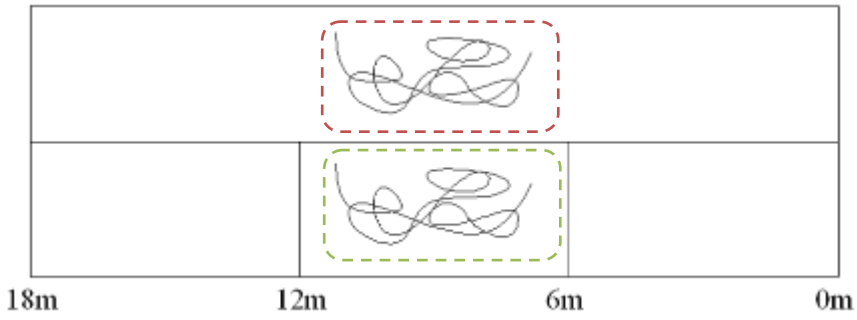

Figure 8 Illustration of Major Concrete Bays/Joint Collection

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Q10. Can you clarify cracking around ironwork?

This defect can only be recorded for Concrete roads. Table 3 *Defect to be recorded* and Figure 9 *Illustration of cracking around ironwork*, explain this defect.

Location	Description	Recorded Defect
A	Major single crack confined within 0.5m of the ironwork	cracking around ironwork
B	Multiple cracking confined within 0.5m of the ironwork	multiple cracking
C	Major single crack less than 1m in length but extends beyond 0.5m of the ironwork	cracking around ironwork
D	Major single crack greater than 1m in length starts within the 0.5m of iron work but does not emanate from ironwork	Major single crack
E	Major single crack greater than 1m in length and extends beyond 0.5m of the ironwork	cracking around ironwork and major single crack

Table 3 Defect to be recorded

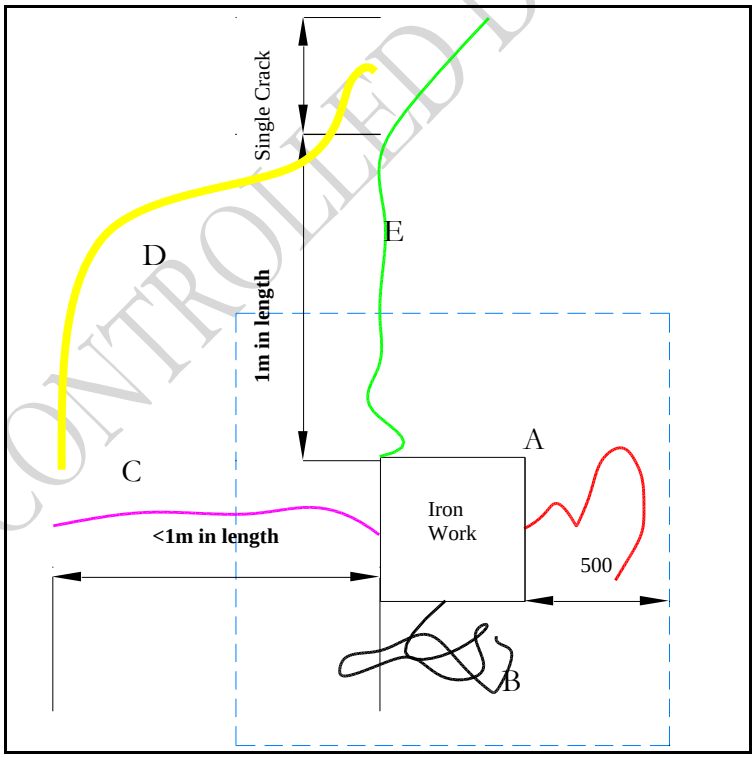

Figure 9 Illustration of cracking around ironwork

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Q11. Can you clarify cracking within a concrete bay?

This defect can only be recorded for Concrete roads. Table 4 *Cracking defect to be recorded* and Figure 10 *Illustration of cracking within a concrete bay*, explain this defect. The blue hatched line denotes 0.5m from the longitudinal and transverse expansion joints.

Location	Description	Recorded Defect
A	Major single Crack which extends from the transverse joint to the longitudinal joint within the 0.5m internal bay	Transverse Joint Cracking
B	Major single crack extending from the longitudinal expansion joint but not longer than 1m	Longitudinal Joint Cracking
C	Major single crack extending from the longitudinal expansion joint, less than 1m in length	Longitudinal Joint Cracking & Major single crack
D	Major single crack extending from the transverse expansion joint but not longer than 1m	Transverse Joint Cracking
E	Major single crack extending from the transverse expansion joint, longer than 1m	Transverse Joint Cracking & Major single crack
F	Major single crack starting within the 0.5m from the Longitudinal joint but no emanating from the joint	Major single crack

Table 4 Cracking defect to be recorded

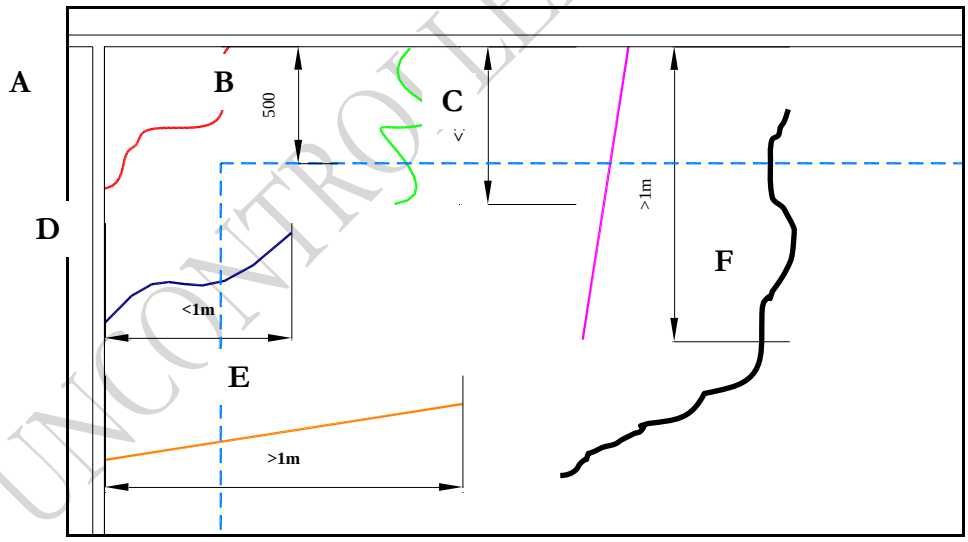

Figure 10 Illustration of cracking within a concrete bay

Clarification is also required for multiple cracking within a concrete bay. Multiple cracking does not need to be interlocking cracks; it can also be multiple single cracks within a concrete bay. In Figure 11 *Illustration of Major Single Cracks* bay 1 from 0 – 6m has 2 major single cracks, therefore multiple cracking must be recorded. Bay 2 from 6 – 12m has one major single crack;

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therefore only Major single crack is recorded. The blue dashed line denotes the 0.5m spacing from the joints.

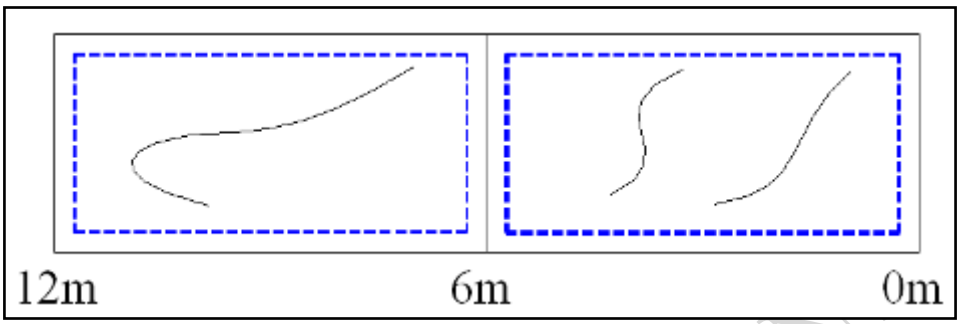

Figure 11 Illustration of Major Single Cracks

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SECTION 2 DVI DEFECT LISTING

Bituminous Carriageway

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Wheel Track Major Cracking	Wide single cracking or multiple cracking/coarse crazing with visible crack width >2mm within the Wheel tracks	BCRW	Length in Metres, No. of Lanes Affected	For measurement purposes, the minimum defect length should be taken as 1m. Recorded for the wheel tracks including areas of reinstatement. A wide crack is defined as one with a width of approximately 2mm or greater. Major cracking shall also be recorded for this defect (minimum 0.5m width to be applied)
Whole Carriageway Major Cracking	Wide single cracking or multiple cracking/coarse crazing with visible crack width occurring in any part of the surface course.	BCRJ	Area in Square Metres	A wide crack is defined as one with a width of approximately 2mm or greater. For area measurement purposes, wide single cracking should be taken as 0.5m wide. Transverse cracks are recorded as Transverse/Reflection Cracking and should not be included.
Whole Carriageway Minor Cracking	Fine cracking or crazing less than 2mm in width.	BCRN	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Whole Carriageway Major Chip Loss	Extensive loss of surface applied chippings having more than one third of the chippings within the area of the defect missing.	BCHN	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel paths and areas of reinstatement. This defect is only applicable to proprietary surfacing i.e. Surface Dress, High friction surfacing and micro-asphalt
Whole Carriageway Minor Chip Loss	Limited loss of surface applied chippings with less than one third of the chippings within the area of the defect missing.	BCHJ	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel paths and areas of reinstatement. This defect is only applicable to proprietary surfacing i.e. Surface Dress, High friction surfacing and micro-asphalt

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Bituminous Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Whole Carriageway Major Fretting	Loss of material other than surface applied chippings from the surface course or pot-holing to the degree that the original surface course is no longer discernible OR loss of material from the surface matrix to a depth greater than 20mm. This may be apparent if larger aggregate in the binder course is exposed. Surface applied chippings are surfaces such as; Surface Dressing and Anti-Skid (Micro Asphalt).	BFRJ	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.
Whole Carriageway Minor Fretting	"Loss of material other than surface applied chippings from the surface course where the original surface course remains discernible OR loss of material for the surface matrix to a depth less than 20mm. Surface applied chippings are surfaces such as; Surface Dressing and Anti-Skid (Micro Asphalt)."	BFRN	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Whole Carriageway Major Fatting	The appearance of bituminous binder on the surface course such that the friction material is flush or covered.	BFAJ	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.
Whole Carriageway Minor Fatting	An excess of bituminous binder on the surface course where the binder is NOT flush with or covering the friction material.	BFAN	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.
Severe Local Settlement/Subsidence	Severe local settlement, subsidence and/or heaving producing a difference in level greater than 30mm. This will include failed patches or public utility reinstatements.	BLSS	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.
Moderate Local Settlement/Subsidence	Moderate local settlement, subsidence and/or heaving producing a difference in level from 13 to 30mm. This will include defective patches or public utility reinstatements.	BLMS	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Wheel Track Rutting	Depression of the surface course in the vehicle wheel paths relative to the remainder of the surface course.	BRUT	Length in metres	For the full cross-section position method the rut depth is a measurement of rutting in the nearside wheel path which is representative of that lane within the sub-section length. For the simplified cross-section position method the rut depth is a measure of the largest nearside wheel path which is representative of that carriageway within the sub-section length. This defect is normally collected by machine surveys
Transverse/Reflection Cracking Severity 1	Single transverse cracks.	BTC1	Count	The recorded parameter is the number of cracks in the section or sub-section. Where cracks do not extend over the full width of the section the total length of cracking should be estimated and the equivalent number of full width cracks recorded. To be recorded when the carriageway appears to be covered concrete
Transverse/Reflection Cracking Severity 2	Single transverse cracks with spalled joints at regular spacing or multiple cracks at regular spacing.	BTC2	Count	The recorded parameter is the number of cracks in the section or sub-section. Where cracks do not extend over the full width of the section the total length of cracking should be estimated and the equivalent number of full width cracks recorded. To be recorded when the carriageway appears to be covered concrete

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Bituminous Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Left Recorded Edge Deterioration Severity 1	Major cracking or fretting in the surface course, confined to the carriageway edge not greater than 20mm in depth	BLE1	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel
Left Recorded Edge Deterioration Severity 2	Disintegration of the edge of the carriageway to a depth below the surface course or deformation greater than 20mm in depth confined to the carriageway edge.	BLE2	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel
Right Recorded Edge Deterioration Severity 1	Major cracking or fretting in the surface course, confined to the carriageway edge not greater than 20mm in depth	BRE1	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel

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Bituminous Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Right Recorded Edge Deterioration Severity 2	Disintegration of the edge of the carriageway to a depth below the surface course or deformation greater than 20mm in depth confined to the carriageway edge.	BRE2	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel
Not Defective	The feature is present but free from defects	BUTS	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	BNAS	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

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Blocked Carriageway

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Major Block Deterioration	Settlement, subsidence or heave producing a difference in level greater than 30mm including rocking blocks and missing blocks. This will include patches or public utility reinstatements and areas where the carriageway has heaved, for example due to tree	KSBD	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.
Minor Block Deterioration	Settlement, subsidence or rutting producing a difference in level from 13mm to 30mm including rocking blocks and misaligned blocks. This will include patches or public utility reinstatements and areas where the carriageway has heaved, for example due to	KBMD	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.
Cracked but level Blocks	Cracked, spalled or otherwise damaged blocks, without any depression or movement.	KDMB	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Blocked Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Missing Filler	Areas where the joint filling medium is not present.	KMIF	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Not rated. Recorded for information only.
Not Defective	The feature is present but free from defects	KNUS	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not Assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	KNNA	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

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Concrete Carriageway

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Major Single Cracking	A single crack within a bay in jointed construction, or parallel single cracks at greater than 5m spacing in CRCP, with a width of 1mm or greater and/or subject to spalling. Includes such single cracks of less than 1m in length which extend to within 0.5	NECR	Direction, Percentage Affected	A "direction" parameter is recorded, indicating whether the cracking is longitudinal or transverse. Percentage affected is the percentage length or width of the bay (sub-section). Intended for the recording of structural cracking; surface crazing/map cracking
Minor Single Cracking	A single crack within a bay in jointed construction, or parallel single cracks at greater than 2 m spacing in CRCP, unspalled and with a width less than 1mm. Includes such single cracks of 1m or more in length which extend to within 0.5m of the edge or a joint and single cracks in permanent patches and reinstatements	NNCR	Direction, Percentage Affected	A "Direction" parameter is recorded, indicating whether the cracking is longitudinal or transverse. Percentage affected is the percentage length or width of the bay (sub-section). Intended for the recording of structural cracking; surface crazing/map cracking should not be recorded under this defect. When more than one minor crack exists within a bay – or parallel minor cracking at 2m centres or less in CRCP – this should be recorded as multiple cracking

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Multiple Cracking	Cracking in more than one direction, interconnected cracks and multiple cracking in permanent patches and reinstatements. Includes more than one distinct crack of any severity within a bay or parallel major cracks at less than 5m spacing in CRCP and/or parallel minor cracks at less than 2m spacing in CRCP	NMUC	Area in Square Metres	Intended for the recording of structural defects; surface crazing/map cracking should not be recorded under this defect. (For individual cracks a nominal crack width of 0.5m is assumed for the determination of the area affected).
Major Concrete Surface Deterioration	Loss of material from the surface of the concrete slab to a depth of 20mm or greater, including scaling, pop outs and potholes but excluding joint or crack spalling.	NSFJ	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Minor Concrete Surface Deterioration	Loss of material from the surface of the concrete slab to a depth of less than 20mm, including scaling, pop outs and potholes but excluding joint or crack spalling. Surface crazing/map cracking should also be recorded under this defect.	NSFN	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Global Settlement	Extensive depressions and/or heaving affecting more than one bay, or lengths in excess of 15m for CRCP, resulting in a variation in level of greater than 50mm	NGST	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Local Settlement	Settlement and/or heaving, including stepping at cracks and subsidence of patches and reinstatements, resulting in a difference of level greater than 10mm within part or all of a single bay or within a length of 15m on CRCP.	NSET	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Faulting at slab joints is not to be recorded under this defect.
Cracking associated with Ironwork	Cracking around manholes, gullies etc.	NCIK	Area in Square Metres	Cracking around ironwork shall be recorded if one or more of the following is achieved: 1. A single crack, up to 1m in length, emanating from the iron work. 2. A Single crack up to 1m in length which starts within 0.5m of the ironwork. 3. A single crack is confined to within 0.5m of the ironwork. If multiple cracking extends immediately from the ironwork then multiple cracking shall be the only defect recorded. If in items 1 and 2 the single crack extends beyond 1m in length than a single crack defect shall also be recorded. For area measurement purposes, the minimum defect width should be taken as 0.1m.

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Transverse Joint Faulting	Severity 1: A difference of level of 5mm to 15mm with no evidence of pumping or dynamic movement. Severity 2: Evidence of pumping or dynamic movement or a difference of level of greater than 15mm.	NFAU	Length in Metres, Severity	For measurement purposes, the minimum defect length should be taken as 1m. UKPMS requires joint inventory for processing of this defect.
Major Transverse Joint Spalling	Loss of material from the joint edge extending more than 100mm from the joint and/or with a depth of 20mm or more. Also includes bituminous repairs at the joint.	NJSJ	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the affected length. UKPMS requires joint inventory for processing
Minor Transverse Joint Spalling	Loss of material from the joint edge, extending up to 100mm from the joint, with a depth less than 20mm.	NJSN	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the affected length. UKPMS requires joint inventory for processing

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Transverse Joint Cracking	Any cracking, including corner cracking and cracking in permanent patches and reinstatements, which is confined to an area within 0.5m of the transverse joint. Cracks less than 1m in length which emanate from and extend beyond this area are also included	NJCK	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Record the length of joint affected by cracking not the total length of the joint. Intended for the recording of structural cracks; surface crazing/map cracking should not be recorded
Defective Transverse Joint Seal	Damage to the joint sealant including Stripping, extrusion and hardening of joint sealant, weed growth and loss of bond.	NDES	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. Typical types of damage include stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the sealant and loss of bond to slab edges. UKPMS requires joint inventory
Longitudinal Joint Faulting	Severity 1: A difference of level of between 5mm and 15mm with no evidence of pumping, dynamic movement or opening of the joint. Severity 2: Evidence of pumping, dynamic movement or opening of the joint, or a difference of level of grater than 15mm	NLFU	Length in Metres, Severity	For measurement purposes, the minimum defect length should be taken as 1m. UKPMS requires joint inventory for processing of this defect.

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Major Longitudinal Joint Spalling	Loss of material from the joint edge, extending more than 100mm from the joint and/or with a depth of 20mm or more. Also includes bituminous repairs at the joint.	NLJJ	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the length affected. UKPMS requires joint inventory for processing
Minor Longitudinal Joint Spalling	Loss of material from the joint edge, extending up to 100mm from the joint, with a depth less than 20mm.	NLJN	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the length affected. UKPMS requires joint inventory for processing
Longitudinal Joint Cracking	Any cracking, including cracking in permanent patches and reinstatements, which is confined to an area within 0.5m of the edge or longitudinal joint. Cracks less than 1m long which emanate from and extend beyond this area are also included.	NLJK	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Corner cracking is recorded as "Transverse Joint Cracking". Record the length of joint affected by cracking, not the total length of cracking. Intended for the recording of structural defects, surface crazing/ map cracking should not be recorded under this item. UKPMS requires joint inventory for processing of this defect

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Defective Longitudinal Joint Seal	Damage to the joint sealant including Stripping, extrusion and hardening of joint sealant, weed growth and loss of bond.	NLDS	Length in Metres	For measurement purposes, the minimum defect length should be taken as 1m. Typical types of damage include stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the sealant and loss of bond to slab edges. UKPMS requires joint inventory for processing
Loss of Texture	Worn and/or polished concrete surface. Worn, fatted or polished bituminous surface on a concrete pavement.	NTEX	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Bituminous overlays less than 20mm would be inspected as concrete.
Defective Surface Dressing	Stripping, fretting or chip loss in surface dressing, thin bituminous overlays or high friction surfacings.	NDSD	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Bituminous overlays greater than 20mm thick are inspected as overlaid concrete.
Bituminous Patching	Bituminous patches and reinstatements in a concrete pavement, other than those at a longitudinal or transverse joint.	NPAT	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Bituminous patches at a joint are recorded as "Major Transverse Joint Spalling" or "Major Longitudinal Joint Spalling" as appropriate. Defects in permanent patches and reinstatements are recorded as for un-patched areas. Local policy and practice in respect of routine maintenance, and public utility reinstatements will determine the circumstances under which bituminous patching is recorded as a defect

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Concrete Carriageway (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Not Defective	The feature is present but free from defects	NNDE	Length	For measurement purposes, the minimum defect length should be taken as 1m.
Not Assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	NNOA	Length	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

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Bituminous Footway/Cycletrack/Verge

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Major Cracking	Multiple cracking and coarse crazing >2mm in width.	(F/Y/V)BCJ*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Minor Cracking	Fine cracking or crazing less than 2mm in width.	(F/Y/V)BCN*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Major Fretting	Loss of material from the surface course to the degree that the original surface course is no longer discernible. This may be apparent if larger aggregate in the binder course is exposed.	(F/Y/V)BFJ*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Minor Fretting	Loss of material from the surface course where the original surface course remains discernible	(F/Y/V)BFN*	Area in Square Metres	Including loss of surface applied material i.e. slurry or coloured surfacing. For area measurement purposes, the minimum defect width should be taken as 0.1m.
Severe Local Settlement/Subsidence	Severe local settlement or subsidence producing a difference in level of greater than 30mm. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.	(F/Y/V)BSS*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Moderate Local Settlement/Subsidence	Moderate local settlement or subsidence producing a difference in level from 10mm to 30mm. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.	(F/Y/V)BMS*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (Y), and Verges (V)

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Bituminous Footway/Cycletrack/Verge (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Longitudinal Trip	Vertical projections exceeding 13mm which extends continuously in the longitudinal direction, e.g. along the back of a kerb or along the edge of a reinstatement.	(F/Y/V)BTR*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Spot Defects	Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm, areas of ponding or depressions and pot-holing.	(F/Y/V)BSP*	Count	Point item recorded to the nearest metre
Not Defective	The feature is present but free from defects	(F/Y/V)BTS*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	(F/Y/V)BNA*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)

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Blocked Footway/Cycletrack/Verge

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Depressed or Missing Blocks	Missing blocks or uncracked blocks which have depressions or vertical projections greater than 13mm.	(F/Y/V)KMB*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements where the footway has heaved, for example due to tree roots.
Cracked and Depressed Blocks	Blocks which are cracked and have gradual depressions or vertical projections greater than 13mm associated with the cracking.	(F/Y/V)KCB*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements where the footway has heaved, for example due to tree roots.
Cracked but Level Blocks	Blocks which are cracked, spalled or otherwise damaged but have no depressions or vertical projections greater than 13mm	(F/Y/V)KDB*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Missing Filler	Areas where the joint filling medium is not present.	(F/Y/V)KMF*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. Not rated. Recorded for information only.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)

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Blocked Footway/Cycletrack/Verge (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Longitudinal Trip	Vertical projections exceeding 13mm which extend continuously in the longitudinal direction e.g. along the back of a kerb or along the edge of a reinstatement.	(F/Y/V)KTR*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Spot Defects	Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding. Potholes. Rocking blocks. Individual missing blocks.	(F/Y/V)KSP*	Count	Point item recorded to the nearest metre
Not Defective	The feature is present but free from defects	(F/Y/V)KTS*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	(F/Y/V)KNA*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (C) , and Verges (V)

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Concrete Footway/Cycletrack/Verge

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Major Cracking	Wide single and multiple cracks.	(F/Y/V)CCJ*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Minor Cracking	Fine cracking or crazing less than 2mm in width.	(F/Y/V)CCN*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Major Scaling/Fretting	Loss of material from the surface leaving the coarse aggregate proud of the matrix or causing loss of coarse aggregate.	(F/Y/V)CFJ*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Minor Scaling/Fretting	Loss of material from the matrix causing exposure of the surface of the coarse aggregate.	(F/Y/V)CFN*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Severe Local Settlement/Subsidence	Severe local settlement or subsidence producing a difference in level of greater then 30mm. This will include patches or public utility reinstatements, gradual depressions associated with cracking of slabs and sudden discontinuities at joints or cracks.	(F/Y/V)CDD*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements where the footway has heaved, for example due to tree roots.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (C) , and Verges (V)

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Concrete Footway/Cycletrack/Verge (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Moderate Local Settlement/Subsidence	Moderate local settlement or subsidence producing a difference in level of between 13mm and 30mm.	(F/Y/V)CMS*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements where the footway has heaved (for example due to tree roots) gradual depressions associated with cracking of slabs
Longitudinal Trip	Vertical projection exceeding 13mm which extends continuously in the longitudinal direction e.g. along the back of a kerb or along the edge of a reinstatement.	(F/Y/V)CTR*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Spot Defects	Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding. Potholes.	(F/Y/V)CSP*	Count	Point item recorded to the nearest metre
Not Defective	The feature is present but free from defects	(F/Y/V)CTS*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	(F/Y/V)CAN*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (C) , and Verges (V)

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Flagged Footway/Cycletrack/Verge

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Cracked and Depressed Flags	Flags which are cracked and have gradual depressions or vertical projections greater than 13mm associated with the cracking.	(F/Y/V)FCF*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.
Depressed Flags (not Cracked)	Flags which are not cracked but have gradual depressions or vertical projections greater than 13mm.	(F/Y/V)FDF*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.
Cracked but Level Flags	Flags which are cracked but have no depressions or vertical projections greater than 13mm.	(F/Y/V)FLF*	Area in Square Metres	For area measurement purposes, the minimum defect width should be taken as 0.1m.
Longitudinal Trip	Vertical projections exceeding 13mm which extend continuously in the longitudinal direction e.g. along the back of a kerb or along the edge of a reinstatement.	(F/Y/V)FTR*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. Vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (C) , and Verges (V)

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Flagged Footway/Cycletrack/Verge (continued)

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Spot Defects	Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding. Potholes. Rocking flags. Missing flags. Gaps between flags.	(F/Y/V)FSP*	Count	Point item recorded to the nearest metre
Not Defective	The feature is present but free from defects	(F/Y/V)FTS*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	(F/Y/V)FNA*	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

* The first letter of the code denotes the feature for Footways (F), Cycletracks (C) , and Verges (V)

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Kerb

DEFECT	DEFINITION	CODE	RECORDED AS	NOTES
Kerb Disintegration	Loss of material from the vertical or horizontal surfaces of the kerb, excluding chips and spalls less than 25mm in any two directions.	KBDN	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Kerb Misalignment	Displacement of the kerb by more than 50mm in a horizontal or vertical direction, including rocking kerbs.	KBMS	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Inadequate Up stand	Length in metres where the vertical height of the kerb falls below 75mm where the kerb is adjacent to the footway and below in 25mm in other locations.	KBIU	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The thresholds below which upstand is considered "inadequate" may vary according to local policy and practice.
Not Defective	The feature is present but free from defects	AUTS	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m.
Not assessed	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.	ANAS	Length in metres	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

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SECTION 3 DVI DEFECT DEFINITIONS AND PHOTOGRAPHS

Bituminous Carriageways	
Defect Description	Wheel Track Major Cracking
Defect Code	BCRW
Recorded As	Length in Metres, No. of Lanes Affected
Definition	Wide single cracking or multiple cracking/coarse crazing with visible crack width >2mm within the Wheel tracks
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Recorded for the wheel tracks including areas of reinstatement. A wide crack is defined as one with a width of approximately 2mm or greater. Major cracking shall also be recorded for this defect (minimum 0.5m width to be applied)

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Bituminous Carriageways

Defect Description	Whole Carriageway Major Cracking
Defect Code	BCRJ
Recorded As	Area in Square Metres

Definition	Wide single cracking or multiple cracking/coarse crazing with visible crack width occurring in any part of the surface course.
Notes	A wide crack is defined as one with a width of approximately 2mm or greater. For area measurement purposes, wide single cracking should be taken as 0.5m wide. Transverse cracks are recorded as Transverse/Reflection Cracking and should not be included.

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Bituminous Carriageways

Defect Description	Whole Carriageway Minor Cracking
Defect Code	BCRN
Recorded As	Area in Square Metres
Definition	Fine cracking or crazing less than 2mm in width.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageways

Defect Description	Whole Carriageway Major Chip Loss
Defect Code	BCHN
Recorded As	Area in Square Metres

Definition	Extensive loss of surface applied chippings having more than one third of the chippings within the area of the defect missing.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel paths and areas of reinstatement. This defect is only applicable to proprietary surfacing i.e. Surface Dress, High friction surfacing and micro-asphalt

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Bituminous Carriageways

Defect Description	Whole Carriageway Minor Chip Loss
Defect Code	BCHJ
Recorded As	Area in Square Metres

Definition	Limited loss of surface applied chippings with less than one third of the chippings within the area of the defect missing.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel paths and areas of reinstatement. This defect is only applicable to proprietary surfacing i.e. Surface Dress, High friction surfacing and micro-asphalt

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Bituminous Carriageways

Defect Description	Whole Carriageway Major Fretting
Defect Code	BFRJ
Recorded As	Area in Square Metres

Definition	Loss of material other than surface applied chippings from the surface course or pot-holing to the degree that the original surface course is no longer discernible OR loss of material from the surface matrix to a depth greater than 20mm. This may be apparent if larger aggregate in the binder course is exposed. Surface applied chippings are surfaces such as; Surface Dressing and Anti-Skid (Micro Asphalt).
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageways

Defect Description	Whole Carriageway Minor Fretting
Defect Code	*BFRN*
Recorded As	Area in Square Metres
Definition	"Loss of material other than surface applied chippings from the surface course where the original surface course remains discernible OR loss of material for the surface matrix to a depth less than 20mm. Surface applied chippings are surfaces such as; Surface Dressing and Anti-Skid (Micro Asphalt)."
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageways

Defect Description	Whole Carriageway Major Fatting
Defect Code	BFAJ
Recorded As	Area in Square Metres

Definition	The appearance of bituminous binder on the surface course such that the friction material is flush or covered.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageways

Defect Description	Whole Carriageway Minor Fatting
Defect Code	BFAN
Recorded As	Area in Square Metres

Definition	An excess of bituminous binder on the surface course where the binder is NOT flush with or covering the friction material.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageways

Defect Description	Severe Local Settlement/Subsidence
Defect Code	BLSS
Recorded As	Area in Square Metres

Definition	Severe local settlement, subsidence and/or heaving producing a difference in level greater than 30mm. This will include failed patches or public utility reinstatements.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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Bituminous Carriageways	
Defect Description	Moderate Local Settlement/Subsidence
Defect Code	BLMS
Recorded As	Area in Square Metres
Definition	Moderate local settlement, subsidence and/or heaving producing a difference in level from 13 to 30mm. This will include defective patches or public utility reinstatements.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.

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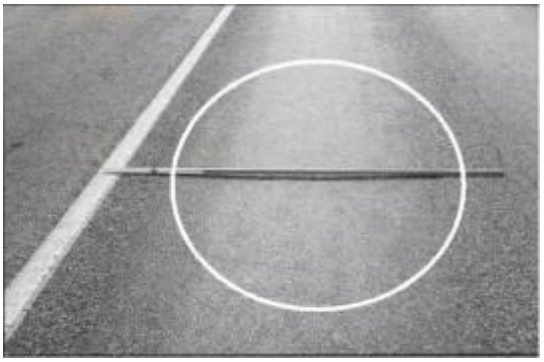
Bituminous Carriageways

Defect Description	Wheel Track Rutting
Defect Code	BRUT
Recorded As	Length in metres



Definition	Depression of the surface course in the vehicle wheel paths relative to the remainder of the surface course.
Notes	For the full cross-section position method the rut depth is a measurement of rutting in the nearside wheel path which is representative of that lane within the sub-section length. For the simplified cross-section position method the rut depth is a measure of the largest nearside wheel path which is representative of that carriageway within the sub-section length. This defect is normally collected by machine surveys

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Bituminous Carriageways

Defect Description	Transverse/Reflection Cracking Severity 1
Defect Code	BTC1
Recorded As	Count

Definition	Single transverse cracks.
Notes	The recorded parameter is the number of cracks in the section or sub-section. Where cracks do not extend over the full width of the section the total length of cracking should be estimated and the equivalent number of full width cracks recorded. To be recorded when the carriageway appears to be covered concrete

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Bituminous Carriageways

Defect Description	Transverse/Reflection Cracking Severity 2
Defect Code	BTC2
Recorded As	Count

Definition	Single transverse cracks with spalled joints at regular spacing or multiple cracks at regular spacing.
Notes	The recorded parameter is the number of cracks in the section or sub-section. Where cracks do not extend over the full width of the section the total length of cracking should be estimated and the equivalent number of full width cracks recorded. To be recorded when the carriageway appears to be covered concrete

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Bituminous Carriageways

Defect Description	Left Recorded Edge Deterioration Severity 1
Defect Code	BLE1
Recorded As	Length in metres
Definition	Major cracking or fretting in the surface course, confined to the carriageway edge not greater than 20mm in depth
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel

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Bituminous Carriageways

Defect Description	Left Recorded Edge Deterioration Severity 2
Defect Code	BLE2
Recorded As	Length in metres

Definition	Disintegration of the edge of the carriageway to a depth below the surface course or deformation greater than 20mm in depth confined to the carriageway edge.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel

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Bituminous Carriageways

Defect Description	Right Recorded Edge Deterioration Severity 1
Defect Code	BRE1
Recorded As	Length in metres
Definition	Major cracking or fretting in the surface course, confined to the carriageway edge not greater than 20mm in depth
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel

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Bituminous Carriageways

Defect Description	Right Recorded Edge Deterioration Severity 2
Defect Code	BRE2
Recorded As	Length in metres

Definition	Disintegration of the edge of the carriageway to a depth below the surface course or deformation greater than 20mm in depth confined to the carriageway edge.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where cracking or fretting extends beyond the carriageway edge they will also be recorded as whole carriageway defects. The choice of left or right recorded edge deterioration depends on the direction of survey Edge Defects can only be recorded where no edge restraint is present i.e. Kerb or channel

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Bituminous Carriageways	
Defect Description	Not Defective
Defect Code	BUTS
Recorded As	Length in metres
Definition	The feature is present but free from defects
Notes	For measurement purposes, the minimum defect length should be taken as 1m.

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Bituminous Carriageways

Defect Description	Not assessed
Defect Code	BNAS
Recorded As	Length in metres

Definition	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

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Blocked Carriageways

Defect Description	**Major Block Deterioration**
Defect Code	**KSBD**
Recorded As	**Area in Square Metres**
Definition	**Settlement, subsidence or heave producing a difference in level greater than 30mm including rocking blocks and missing blocks. This will include patches or public utility reinstatements and areas where the carriageway has heaved, for example due to tree**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.**

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Blocked Carriageways

Defect Description	**Minor Block Deterioration**
Defect Code	**KBMD**
Recorded As	**Area in Square Metres**
Definition	**Settlement, subsidence or rutting producing a difference in level from 13mm to 30mm including rocking blocks and misaligned blocks. This will include patches or public utility reinstatements and areas where the carriageway has heaved, for example due to**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.**

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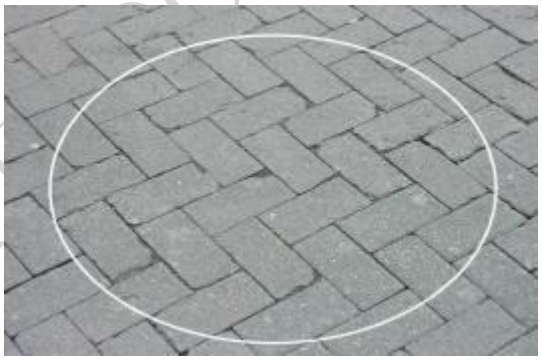
Blocked Carriageways

Defect Description	**Cracked but level Blocks**
Defect Code	**KDMB**
Recorded As	**Area in Square Metres**
	
Definition	**Cracked, spalled or otherwise damaged blocks, without any depression or movement.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **Recorded for any part of the surface course, including the wheel tracks and areas of reinstatement.**

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Blocked Carriageways	
Defect Description	**Missing Filler**
Defect Code	**KMIF**
Recorded As	**Area in Square Metres**
Definition	**Areas where the joint filling medium is not present.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **Not rated. Recorded for information only.**

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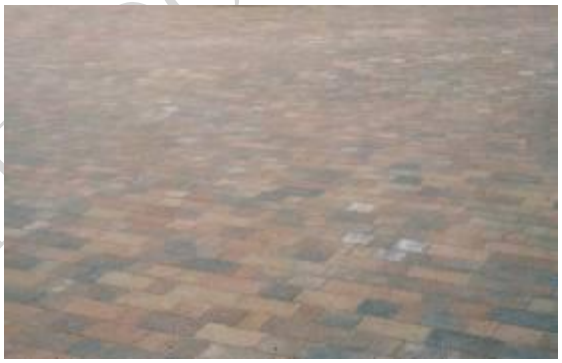
Blocked Carriageways	
Defect Description	**Not Defective**
Defect Code	**KNUS**
Recorded As	**Length in metres**
	
Definition	**The feature is present but free from defects**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Blocked Carriageways	
Defect Description	**Not Assessed**
Defect Code	**KNNA**
Recorded As	**Length in metres**
Definition	**The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**

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Concrete Carriageways

Defect Description	Major Single Cracking
Defect Code	NECR
Recorded As	Direction, Percentage Affected
Definition	A single crack within a bay in jointed construction, or parallel single cracks at greater than 5m spacing in CRCP, with a width of 1mm or greater and/or subject to spalling. Includes such single cracks of less than 1m in length which extend to within 0.5
Notes	A "direction" parameter is recorded, indicating whether the cracking is longitudinal or transverse. Percentage affected is the percentage length or width of the bay (sub-section). Intended for the recording of structural cracking; surface crazing/map cracking

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Concrete Carriageways

Defect Description	Minor Single Cracking
Defect Code	NNCR
Recorded As	Direction, Percentage Affected

Definition	A single crack within a bay in jointed construction, or parallel single cracks at greater than 2 m spacing in CRCP, unspalled and with a width less than 1mm. Includes such single cracks of 1m or more in length which extend to within 0.5m of the edge or a joint and single cracks in permanent patches and reinstatements
Notes	A "Direction" parameter is recorded, indicating whether the cracking is longitudinal or transverse. Percentage affected is the percentage length or width of the bay (sub-section). Intended for the recording of structural cracking; surface crazing/map cracking should not be recorded under this defect. When more than one minor crack exists within a bay – or parallel minor cracking at 2m centres or less in CRCP – this should be recorded as multiple cracking

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Concrete Carriageways

Defect Description	Multiple Cracking
Defect Code	NMUC
Recorded As	Area in Square Metres

Definition	Cracking in more than one direction, interconnected cracks and multiple cracking in permanent patches and reinstatements. Includes more than one distinct crack of any severity within a bay or parallel major cracks at less than 5m spacing in CRCP and/or parallel minor cracks at less than 2m spacing in CRCP
Notes	Intended for the recording of structural defects; surface crazing/map cracking should not be recorded under this defect. (For individual cracks a nominal crack width of 0.5m is assumed for the determination of the area affected).

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Concrete Carriageways

Defect Description	Major Concrete Surface Deterioration
Defect Code	NSFJ
Recorded As	Area in Square Metres

Definition	Loss of material from the surface of the concrete slab to a depth of 20mm or greater, including scaling, pop outs and potholes but excluding joint or crack spalling.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m.

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Concrete Carriageways	
Defect Description	Minor Concrete Surface Deterioration
Defect Code	NSFN
Recorded As	Area in Square Metres
Definition	Loss of material from the surface of the concrete slab to a depth of less than 20mm, including scaling, pop outs and potholes but excluding joint or crack spalling. Surface crazing/map cracking should also be recorded under this defect.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m.

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Concrete Carriageways	
Defect Description	Global Settlement
Defect Code	NGST
Recorded As	Area in Square Metres
Definition	Extensive depressions and/or heaving affecting more than one bay, or lengths in excess of 15m for CRCP, resulting in a variation in level of greater than 50mm
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m.

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Concrete Carriageways

Defect Description	Local Settlement
Defect Code	NSET
Recorded As	Area in Square Metres

Definition	Settlement and/or heaving, including stepping at cracks and subsidence of patches and reinstatements, resulting in a difference of level greater than 10mm within part or all of a single bay or within a length of 15m on CRCP.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Faulting at slab joints is not to be recorded under this defect.

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Concrete Carriageways

Defect Description	Cracking associated with Ironwork
Defect Code	NCIK
Recorded As	Area in Square Metres

Definition	Cracking around manholes, gullies etc.
Notes	Cracking around ironwork shall be recorded if one or more of the following is achieved: 1. A single crack, up to 1m in length, emanating from the iron work. 2. A Single crack up to 1m in length which starts within 0.5m of the ironwork. 3. A single crack is confined to within 0.5m of the ironwork. If multiple cracking extends immediately from the ironwork then multiple cracking shall be the only defect recorded. If in items 1 and 2 the single crack extends beyond 1m in length than a single crack defect shall also be recorded. For area measurement purposes, the minimum defect width should be taken as 0.1m.

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Concrete Carriageways

Defect Description	Transverse Joint Faulting
Defect Code	NFAU
Recorded As	Length in Metres, Severity

Definition	Severity 1: A difference of level of 5mm to 15mm with no evidence of pumping or dynamic movement. Severity 2: Evidence of pumping or dynamic movement or a difference of level of greater than 15mm.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. UKPMS requires joint inventory for processing of this defect.

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Concrete Carriageways

Defect Description	Major Transverse Joint Spalling
Defect Code	NJSJ
Recorded As	Length in Metres

Definition	Loss of material from the joint edge extending more than 100mm from the joint and/or with a depth of 20mm or more. Also includes bituminous repairs at the joint.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the affected length. UKPMS requires joint inventory for processing

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Concrete Carriageways

Defect Description	Minor Transverse Joint Spalling
Defect Code	NJSN
Recorded As	Length in Metres

Definition	Loss of material from the joint edge, extending up to 100mm from the joint, with a depth less than 20mm.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the affected length. UKPMS requires joint inventory for processing

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Concrete Carriageways

Defect Description	Transverse Joint Cracking
Defect Code	NJCK
Recorded As	Length in Metres

Definition	Any cracking, including corner cracking and cracking in permanent patches and reinstatements, which is confined to an area within 0.5m of the transverse joint. Cracks less than 1m in length which emanate from and extend beyond this area are also included
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Record the length of joint affected by cracking not the total length of the joint. Intended for the recording of structural cracks; surface crazing/map cracking should not be recorded

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Concrete Carriageways

Defect Description	Defective Transverse Joint Seal
Defect Code	NDES
Recorded As	Length in metres

Definition	Damage to the joint sealant including Stripping, extrusion and hardening of joint sealant, weed growth and loss of bond.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Typical types of damage include stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the sealant and loss of bond to slab edges. UKPMS requires joint inventory

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Concrete Carriageways

Defect Description	Longitudinal Joint Faulting
Defect Code	NLFU
Recorded As	Length in Metres, Severity

Definition	Severity 1: A difference of level of between 5mm and 15mm with no evidence of pumping, dynamic movement or opening of the joint. Severity 2: Evidence of pumping, dynamic movement or opening of the joint, or a difference of level of grater than 15mm
Notes	For measurement purposes, the minimum defect length should be taken as 1m. UKPMS requires joint inventory for processing of this defect.

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Concrete Carriageways

Defect Description	Major Longitudinal Joint Spalling
Defect Code	NLJJ
Recorded As	Length in Metres

Definition	Loss of material from the joint edge, extending more than 100mm from the joint and/or with a depth of 20mm or more. Also includes bituminous repairs at the joint.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the length affected. UKPMS requires joint inventory for processing

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Concrete Carriageways

Defect Description	Minor Longitudinal Joint Spalling
Defect Code	NLJN
Recorded As	Length in Metres
Definition	Loss of material from the joint edge, extending up to 100mm from the joint, with a depth less than 20mm.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Where the joint is subject to both minor and major joint spalling, record as major joint spalling for the whole of the length affected. UKPMS requires joint inventory for processing

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Concrete Carriageways

Defect Description	Longitudinal Joint Cracking
Defect Code	NLJK
Recorded As	Length in Metres

Definition	Any cracking, including cracking in permanent patches and reinstatements, which is confined to an area within 0.5m of the edge or longitudinal joint. Cracks less than 1m long which emanate from and extend beyond this area are also included.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Corner cracking is recorded as "Transverse Joint Cracking". Record the length of joint affected by cracking, not the total length of cracking. Intended for the recording of structural defects, surface crazing/ map cracking should not be recorded under this item. UKPMS requires joint inventory for processing of this defect

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Concrete Carriageways

Defect Description	Defective Longitudinal Joint Seal
Defect Code	NLDS
Recorded As	Length in Metres

Definition	Damage to the joint sealant including Stripping, extrusion and hardening of joint sealant, weed growth and loss of bond.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. Typical types of damage include stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the sealant and loss of bond to slab edges. UKPMS requires joint inventory for processing

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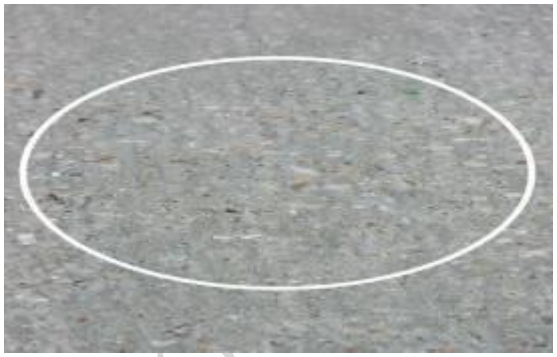
Concrete Carriageways

Defect Description	Loss of Texture
Defect Code	NTEX
Recorded As	Area in Square Metres



Definition	Worn and/or polished concrete surface. Worn, fatted or polished bituminous surface on a concrete pavement.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Bituminous overlays less than 20mm would be inspected as concrete.

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Concrete Carriageways

Defect Description	Defective Surface Dressing
Defect Code	NDSD
Recorded As	Area in Square Metres

Definition	Stripping, fretting or chip loss in surface dressing, thin bituminous overlays or high friction surfacings.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Bituminous overlays greater than 20mm thick are inspected as overlaid concrete.

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Concrete Carriageways

Defect Description	Bituminous Patching
Defect Code	NPAT
Recorded As	Area in Square Metres

Definition	Bituminous patches and reinstatements in a concrete pavement, other than those at a longitudinal or transverse joint.
Notes	For area measurement purposes, the minimum defect width should be taken as 0.1m. Bituminous patches at a joint are recorded as "Major Transverse Joint Spalling" or "Major Longitudinal Joint Spalling" as appropriate. Defects in permanent patches and reinstatements are recorded as for un-patched areas. Local policy and practice in respect of routine maintenance, and public utility reinstatements will determine the circumstances under which bituminous patching is recorded as a defect

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Concrete Carriageways

Defect Description	Not Defective
Defect Code	NNDE
Recorded As	Length
Definition	The feature is present but free from defects
Notes	For measurement purposes, the minimum defect length should be taken as 1m.

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Concrete Carriageways

Defect Description	Not Assessed
Defect Code	NNOA
Recorded As	Length

Definition	The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.
Notes	For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Major Cracking
Defect Code	(F/Y/V)BCJ* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Multiple cracking and coarse crazing >2mm in width.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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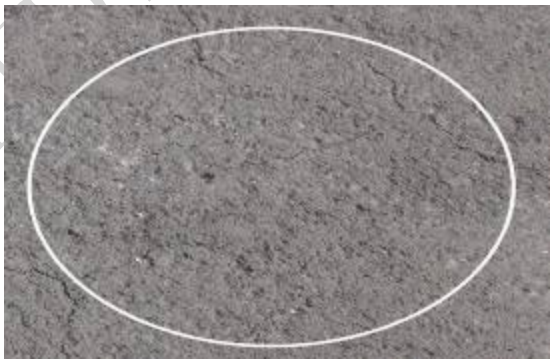
Bituminous Footway/Cycletrack/Verge	
Defect Description	Minor Cracking
Defect Code	(F/Y/V)BCN* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
	
Definition	**Fine cracking or crazing less than 2mm in width.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Major Fretting
Defect Code	(F/Y/V)BFJ* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Loss of material from the surface course to the degree that the original surface course is no longer discernible. This may be apparent if larger aggregate in the binder course is exposed.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Minor Fretting
Defect Code	(F/Y/V)BFN* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Loss of material from the surface course where the original surface course remains discernible**
Notes	**Including loss of surface applied material i.e. slurry or coloured surfacing.** **For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Severe Local Settlement/Subsidence
Defect Code	(F/Y/V)BSS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Severe local settlement or subsidence producing a difference in level of greater than 30mm. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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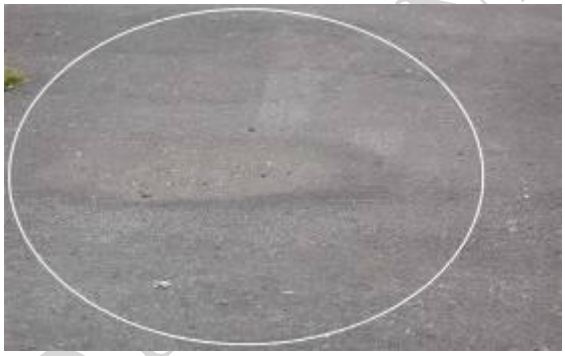
Bituminous Footway/Cycletrack/Verge	
Defect Description	Moderate Local Settlement/Subsidence
Defect Code	(F/Y/V)BMS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
	
Definition	**Moderate local settlement or subsidence producing a difference in level from 10mm to 30mm. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Longitudinal Trip
Defect Code	(F/Y/V)BTR* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**Vertical projections exceeding 13mm which extends continuously in the longitudinal direction, e.g. along the back of a kerb or along the edge of a reinstatement.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Spot Defects
Defect Code	(F/Y/V)BSP* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Count**
Definition	**Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm, areas of ponding or depressions and pot-holing.**
Notes	**Point item recorded to the nearest metre**

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Bituminous Footway/Cycletrack/Verge	
Defect Description	Not Defective
Defect Code	(F/Y/V)BTS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**The feature is present but free from defects**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Bituminous Footway/Cycletrack/Verge

Defect Description	Not assessed
Defect Code	(F/Y/V)BNA* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**

Definition	**The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Depressed or Missing Blocks
Defect Code	(F/Y/V)KMB* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Missing blocks or uncracked blocks which have depressions or vertical projections greater than 13mm.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **This will include patches or public utility reinstatements where the footway has heaved, for example due to tree roots.**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Cracked and Depressed Blocks
Defect Code	(F/Y/V)KCB* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Blocks which are cracked and have gradual depressions or vertical projections greater than 13mm associated with the cracking.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **This will include patches or public utility reinstatements where the footway has heaved, for example due to tree roots.**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Cracked but Level Blocks
Defect Code	(F/Y/V)KDB* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Blocks which are cracked, spalled or otherwise damaged but have no depressions or vertical projections greater than 13mm**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Missing Filler
Defect Code	(F/Y/V)KMF* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Areas where the joint filling medium is not present.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **Not rated. Recorded for information only.**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Longitudinal Trip
Defect Code	(F/Y/V)KTR* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**Vertical projections exceeding 13mm which extend continuously in the longitudinal direction e.g. along the back of a kerb or along the edge of a reinstatement.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Spot Defects
Defect Code	(F/Y/V)KSP* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Count**
Definition	**Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding. Potholes. Rocking blocks. Individual missing blocks.**
Notes	**Point item recorded to the nearest metre**

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Blocked Footway/Cycletrack/Verge	
Defect Description	Not Defective
Defect Code	(F/Y/V)KTS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**The feature is present but free from defects**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Blocked Footway/Cycletrack/Verge

Defect Description	Not assessed
Defect Code	(F/Y/V)KNA* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**

Definition	**The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Major Cracking
Defect Code	(F/Y/V)CCJ* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Wide single and multiple cracks.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Minor Cracking
Defect Code	(F/Y/V)CCN* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Fine cracking or crazing less than 2mm in width.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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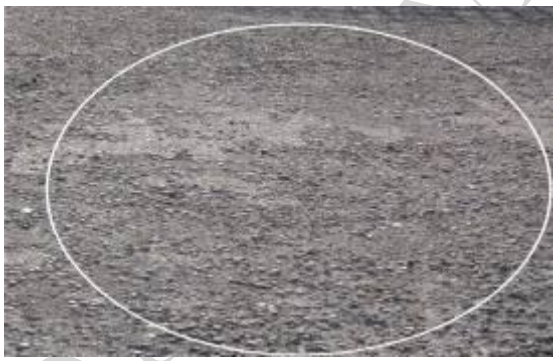
Concrete Footway/Cycletrack/Verge	
Defect Description	Major Scaling/Fretting
Defect Code	(F/Y/V)CFJ* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
	
Definition	**Loss of material from the surface leaving the coarse aggregate proud of the matrix or causing loss of coarse aggregate.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Minor Scaling/Fretting
Defect Code	(F/Y/V)CFN* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Loss of material from the matrix causing exposure of the surface of the coarse aggregate.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Concrete Footway/Cycletrack/Verge

Defect Description	Severe Local Settlement/Subsidence
Defect Code	(F/Y/V)CDD* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**

Definition	**Severe local settlement or subsidence producing a difference in level of greater then 30mm. This will include patches or public utility reinstatements, gradual depressions associated with cracking of slabs and sudden discontinuities at joints or cracks.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.** **This will include patches or public utility reinstatements where the footway has heaved, for example due to tree roots.**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Moderate Local Settlement/Subsidence
Defect Code	(F/Y/V)CMS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Moderate local settlement or subsidence producing a difference in level of between 13mm and 30mm.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements where the footway has heaved (for example due to tree roots) gradual depressions associated with cracking of slabs**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Longitudinal Trip
Defect Code	(F/Y/V)CTR* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**Vertical projection exceeding 13mm which extends continuously in the longitudinal direction e.g. along the back of a kerb or along the edge of a reinstatement.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Spot Defects
Defect Code	(F/Y/V)CSP* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Count**
Definition	**Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding. Potholes.**
Notes	**Point item recorded to the nearest metre**

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Concrete Footway/Cycletrack/Verge	
Defect Description	Not Defective
Defect Code	(F/Y/V)CTS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**The feature is present but free from defects**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Concrete Footway/Cycletrack/Verge

Defect Description	Not assessed
Defect Code	(F/Y/V)CAN* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**

Definition	**The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**

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Flagged Footway/Cycletrack/Verge	
Defect Description	Cracked and Depressed Flags
Defect Code	(F/Y/V)FCF* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Flags which are cracked and have gradual depressions or vertical projections greater than 13mm associated with the cracking.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.**

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Flagged Footway/Cycletrack/Verge	
Defect Description	Depressed Flags (not Cracked)
Defect Code	(F/Y/V)FDF* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Flags which are not cracked but have gradual depressions or vertical projections greater than 13mm.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m. This will include patches or public utility reinstatements and areas where the footway has heaved, for example due to tree roots.**

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Flagged Footway/Cycletrack/Verge	
Defect Description	Cracked but Level Flags
Defect Code	(F/Y/V)FLF* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Area in Square Metres**
Definition	**Flags which are cracked but have no depressions or vertical projections greater than 13mm.**
Notes	**For area measurement purposes, the minimum defect width should be taken as 0.1m.**

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Flagged Footway/Cycletrack/Verge	
Defect Description	Longitudinal Trip
Defect Code	(F/Y/V)FTR* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**Vertical projections exceeding 13mm which extend continuously in the longitudinal direction e.g. along the back of a kerb or along the edge of a reinstatement.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.** **Vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding.**

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Flagged Footway/Cycletrack/Verge	
Defect Description	Spot Defects
Defect Code	(F/Y/V)FSP* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Count**
Definition	**Isolated "spot" defects such as vertical projections ("trips") exceeding 13mm. Small depressions and areas of ponding. Potholes. Rocking flags. Missing flags. Gaps between flags.**
Notes	**Point item recorded to the nearest metre**

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Flagged Footway/Cycletrack/Verge	
Defect Description	Not Defective
Defect Code	(F/Y/V)FTS* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**
Definition	**The feature is present but free from defects**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Flagged Footway/Cycletrack/Verge

Defect Description	Not assessed
Defect Code	(F/Y/V)FNA* * The first letter of the code denotes the feature for Footways (F), Cycletracks (Y) , and Verges (V)
Recorded As	**Length in metres**

Definition	**The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**

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Kerb	
Defect Description	**Kerb Disintegration**
Defect Code	**KBDN**
Recorded As	**Length in metres**
Definition	**Loss of material from the vertical or horizontal surfaces of the kerb, excluding chips and spalls less than 25mm in any two directions.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Kerb	
Defect Description	**Kerb Misalignment**
Defect Code	**KBMS**
Recorded As	**Length in metres**
Definition	**Displacement of the kerb by more than 50mm in a horizontal or vertical direction, including rocking kerbs.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Kerb	
Defect Description	**Inadequate Up stand**
Defect Code	**KBIU**
Recorded As	**Length in metres**
Definition	**Length in metres where the vertical height of the kerb falls below 75mm where the kerb is adjacent to the footway and below in 25mm in other locations.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.** **The thresholds below which upstand is considered "inadequate" may vary according to local policy and practice.**

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Kerb	
Defect Description	**Not Defective**
Defect Code	**AUTS**
Recorded As	**Length in metres**
Definition	**The feature is present but free from defects**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m.**

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Kerb	
Defect Description	**Not assessed**
Defect Code	**ANAS**
Recorded As	**Length in metres**
Definition	**The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**
Notes	**For measurement purposes, the minimum defect length should be taken as 1m. The feature is present but not assessed. This may occur due to the presence of road works or parked cars or the execution of a partial survey.**

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